Water Service Reliability

As described in Chapter 4 "Reliability of Supply," RLECWD water supplies are guided by the Water Forum Agreement. The Agreement calls for conjunctive use of surface water and groundwater. During Dry years water purveyors switch from surface water supplies to groundwater. Summer surface water supplies to RLECWD are curtailed under the WFA during "years when the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 1,600,000 acre feet." During these periods RLECWD may receive winter flows. As stated in Chapter 3 "Water Sources," the amount of surface water available to RLECWD and the conditions when it will be available is currently under negotiation. For purposes of the 2005 UWMP, 3,000 acre feet per year is assumed to be the surface water amount and all surface water deliveries would be curtailed whenever the 1.6 million AF inflow to Folsom Reservoir criteria is exercised. This would include all single dry years, and multiple dry years.

Table 31 - Projected Normal Year Sources for RLECWD Service Area

Source	2010	2015	2020	2025	2030
surface water	1,500	3,000	5,000	5,000	5,000
recycled wastewater - Roseville	1,500	2,000	2,000	2,000	2,000
recycled wastewater - SRCSD	0	0	500	500	500
RLECWD ground water	4,160	6,550	7,790	12,910	18,030
Total RLECWD Supply	7,160	11,550	15,290	20,410	25,530
private groundwater	3,000	3,000	3,000	2,650	2,300
Service area total	10,160	14,550	18,290	23,060	27,830

Table 32 - Projected Normal Year Demand in RLECWD Service Area

	2010	2015	2020	2025	2030
Urban w/o Elverta SP	3,500	5,700	7,900	12,600	17,300
Elverta SP Phase 1	1,140	1,140	1,140	1,140	1,140
Non-Franchised Area Phase 1	50	50	50	50	50
Elverta SP Phase 2		1,230	2,460	2,460	2,460
Non-Franchised Area Phase 2		100	100	100	100
Lg Industry – Estimate	500	1,000	1,000	1,000	1,000
RLECWD Customer Subtotal	5,190	9,220	12,650	17,350	22,050
System Non-Revenue Water 9%	470	830	1,140	1,560	1,980
Cherry Island Golf Course & groundwater recharge	1,500	1,500	1,500	1,500	1,500
RLECWD Deliveries Subtotal	7,160	11,550	15,290	20,410	25,530
Private wells	3,000	3,000	3,000	2,650	2,300
Total Demand in RLECWD Service Area	**10,160**	**14,550**	**18,290**	**23,060**	**27,830**

Table 33 - Projected Normal Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
RLECWD Supply Totals	7,160	11,550	15,290	20,410	25,530
RLECWD Demand Totals	7,160	11,550	15,290	20,410	25,530
Difference	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

During single dry years surface water supplies would be curtailed and groundwater would be used to replace the surface water. Supplies of reclaimed water would remain available. Stage 2 Water Shortage Conditions would be invoked. There would be no deficiency of water supply.

Actual reduction in water consumption may be determined in two ways:

- Monitor water volume pumped from wells
- Monitor metered water demand of customers since they are all metered.

Table 34 - Projected Single Dry Year Sources for RLECWD Service Area

Source	2010	2015	2020	2025	2030
surface water	0	0	0	0	0
recycled wastewater - Roseville	1,500	2,000	2,000	2,000	2,000
recycled wastewater - SRCSD	0	0	500	500	500
RLECWD ground water	5,660	9,550	12,790	17,910	23,030
Total RLECWD Supply	7,160	11,550	15,290	20,410	25,530
private groundwater	3,000	3,000	3,000	2,650	2,300
Service area total	10,160	14,550	18,290	23,060	27,830

Table 35 - Projected Single Dry Year Demand in RLECWD Service Area

	2010	2015	2020	2025	2030
RLECWD Deliveries Subtotal	7,160	11,550	15,290	20,410	25,530
Private wells	3,000	3,000	3,000	2,650	2,300
Total Demand in RLECWD Service Area	**10,160**	**14,550**	**18,290**	**23,060**	**27,830**

Table 36 - Projected Single Dry Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
RLECWD Supply Totals	7,160	11,550	15,290	20,410	25,530
RLECWD Demand Totals	7,160	11,550	15,290	20,410	25,530
Difference	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

During multiple dry years, surface water supplies would be curtailed and groundwater would be used to fully replace the surface water in the first two dry years. Stage 2 Water Shortage Conditions would be invoked during the first two dry years. During the third year, Stage Three Water Shortage restrictions would be invoked in concert with regional water shortage public relations efforts. Groundwater pumping would be reduced in the amounts conserved by the Stage Three Shortage restrictions whereby landscape irrigation applications are reduced by one-third, causing a fifteen percent reduction in total demand. Supplies of reclaimed water would remain available. The following three tables reflect conditions on the third year of a multiple dry year scenario.

Table 37 – Projected Multiple Dry Year Supplies - AFPY

Source	2010	2015	2020	2025	2030
surface water	0	0	0	0	0
recycled wastewater - Roseville	1,500	2,000	2,000	2,000	2,000
recycled wastewater - SRCSD	0	0	500	500	500
RLECWD ground water	4,880	8,235	10,930	15,290	19,660
Total RLECWD Supply	6,380	10,235	13,430	17,790	22,160

Table 38 – Projected Multiple Dry Year Demand - AFPY

	2010	2015	2020	2025	2030
Urban w/o Elverta SP	3,500	5,700	7,900	12,600	17,300
Elverta SP Phase 1	1,140	1,140	1,140	1,140	1,140
Non-Franchised Area Phase 1	50	50	50	50	50
Elverta SP Phase 2		1,230	2,460	2,460	2,460
Non-Franchised Area Phase 2		100	100	100	100
Large Industry - Estimate	500	1,000	1,000	1,000	1,000
RLECWD Customer Subtotal	4,487	7,987	10,903	14,898	18,893
System Non-Revenue Water at 9%	400	720	980	1,340	1,700
Cherry Island Golf Course & groundwater recharge	1,500	1,500	1,500	1,500	1,500
RLECWD Deliveries Subtotal	6,390	10,210	13,380	17,740	22,090

Table 39 - Projected Multiple Dry Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
RLECWD Supply Totals	6,380	10,235	13,430	17,790	22,160
RLECWD Demand Totals	6,390	10,210	13,380	17,740	22,090
Difference	-10	25	50	50	70
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Year by year comparisons of water supply and water demand during multiple year water shortages are displayed in Tables 40-44. The same parameters are used in these tables as were used in Tables 37-29. For each five year period:

- The first year (years ending in 6 and 1) is assumed to be normal with normal supplies and demand
- The second year (years ending in 7 and 2) is assumed to be the first dry year. Demand is assumed to be normal. Surface water supplies are curtailed as in Table 37. Groundwater pumping is increased to replace surface water and match demand.
- The third year (years ending in 8 and 3) is assumed to be the second dry year. Demand is assumed to be normal. Surface water supplies are curtailed as in Table 37. Stage 2 Water Shortage restrictions are invoked. Groundwater pumping is increased to replace surface water and match demand.
- The forth year (years ending in 9 and 4) is assumed to be the third dry year. Surface water supplies are curtailed as in Table 37. Stage 3 Water Shortage restrictions are invoked which require landscape irrigation to be reduced by one-third causing a fifteen percent reduction in total annual demand. Groundwater pumping is regulated increased to replace surface water and match demand.
- The fifth year (years ending in 0 and 5) is assumed to be a normal water year. Surface water supplies are resumed. Water Shortage Restrictions revert back to Stage 1 (normal conditions). Groundwater pumping resumes under normal conditions.

Table 40 - Projected Multiple Dry Year Supply and Demand Comparison 2006-2010

	normal year	dry year #1	dry year #2	dry year #3	normal year
	2006	2007	2008	2009	2010
Multiple Dry Year Supply Scenario	3,750	4,100	4,430	4,050	7,160
Multiple Dry Year Demand Scenario	3,750	4,100	4,430	4,050	7,160
Difference (supply - demand)	0	0	0	0	0
Difference as percent of supply	0%	0%	0%	0%	0%
Difference as percent of Demand	0%	0%	0%	0%	0%

Table 41 - Projected Multiple Dry Year Supply and Demand Comparison 2011-2015

	normal year	dry year #1	dry year #2	dry year #3	normal year
	2011	2012	2013	2014	2015
Multiple Dry Year Supply Scenario	7,940	8,720	9,470	9,010	11,550
Multiple Dry Year Demand Scenario	7,940	8,720	9,470	9,010	11,550
Difference (supply - demand)	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Table 42 - Projected Multiple Dry Year Supply and Demand Comparison 2016-2020

	normal year	dry year #1	dry year #2	dry year #3	normal year
	2016	2017	2018	2019	2020
Multiple Dry Year Supply Scenario	12,300	13,100	13,800	12,750	15,290
Multiple Dry Year Demand Scenario	12,300	13,100	13,800	12,750	15,290
Difference (supply - demand)	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Table 43 - Projected Multiple Dry Year Supply and Demand Comparison 2021-2025

	normal year	dry year #1	dry year #2	dry year #3	normal year
	2021	2022	2023	2024	2025
Multiple Dry Year Supply Scenario	16,310	17,340	18,360	16,870	20,410
Multiple Dry Year Demand Scenario	16,310	17,340	18,360	16,870	20,410
Difference (supply - demand)	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Table 44 - Projected Multiple Dry Year Supply and Demand Comparison 2026-2030

	normal year	dry year #1	dry year #2	dry year #3	normal year
	2026	**2027**	**2028**	**2029**	**2030**
Multiple Dry Year Supply Scenario	21,440	22,460	23,490	21,220	25,530
Multiple Dry Year Demand Scenario	21,440	22,460	23,490	21,220	25,530
Difference (supply - demand)	0	0	0	0	0
Difference as percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%